effect of treatment characteristics of upper extremity interventions on the decision of tetraplegic subjects to accept treatment. **METHOD:** A discrete choice experiment (DCE) was performed, where treatment characteristics were obtained to establish different treatment scenarios. Seven different treatment characteristics were obtained from a panel of international experts. Tetraplegics were offered 20 sets of two different treatment scenarios and asked to select the best scenario. **RESULTS:** A total of 47 tetraplegic subjects with C5–6 lesions, motor group M1–4 were selected. Relative importance of treatment characteristics were: intervention type (surgery or surgery with FES implant) 13%, number of operations 15%, in patient rehabilitation period 22%, ambulant rehabilitation period 9%, complication rate 15%, improvement of elbow function 10%, improvement of hand function 15%. Effects of various changes of treatment protocols were determined. An inpatient rehabilitation period of maximum 4 weeks increases preference for treatment with 32%. One instead of two operative procedures increases the preference with 25%. **CONCLUSION:** In-patient rehabilitation period appears to have the greatest impact on the decision by patients to have surgery or not. Implantation of a neural implant is not the main reason for not accepting this type of treatment.

PNL16

THE ECONOMIC BURDEN OF PARKINSONISM IN ITALY

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OBJECTIVES: The primary objective is to evaluate health, non-health cost and utilities differences between Parkinson patients with diagnosis performed through SPECT (Single Proton Emission Computerized Tomography) and patients diagnosed traditionally. **METHODS:** This economic analysis is part of the prospective, multicentre, observational study DIAPASON (Diagnosis of Parkinson's Disease: Economics and Outcomes Impact), which involved 17 neurology centers. The present poster presents the preliminary economic results. Inclusion criteria: all subjects with suspect parkinsonism, "de novo" patients or in dopaminergic therapy for 3 months at the most. Exclusion criteria: subject with dementia senile, subjects treated with antidopaminergic drugs, subjects with iatrogenic forms of disease already known or clear vascular lesions of substantia nigra or caudato or putamen. The prospectives used in the study were: national health system (NHS) and society. Data were collected using an electronic case report form. Utilities were calculated using the EuroQol (EQ-5D) questionnaire. **RESULTS:** In November 2004, 147 patients (50 NO SPECT, 97 SPECT) had already performed the second visit. For both first and second visit the total cost for patients with diagnosis performed through SPECT was higher than that obtained for patients diagnosed traditionally: the mean health cost supported by NHS per patient was €2,577.79 (€1,562.63 for NO SPECT patients and €3,024.00 for SPECT ones), and mean non health cost obtained per patient was €3,553.56 (€3923.44 for SPECT patients, €2712.08 for NO SPECT patients). For subjects diagnosed traditionally the cost per QALYs gained was €36,225.2 compared to €15,291.6 for SPECT patients group. **CONCLUSION:** The introduction of new technologies, as SPECT, and the use of new radiolabelled drugs concur to improve early diagnosis of Parkinson's disease and related diseases. Diagnosis using SPECT has health and non health cost higher than traditional diagnosis, but a cost-utility analysis demonstrate its cost saving role in comparison with traditional diagnosis.

PNL17

A COST-UTILITY MODEL COMPARING AZILECT® (RASAGILINE) WITH STANDARD CARE AND ENTACAPONE IN THE TREATMENT OF PARKINSONIAN PATIENTS WITH MOTOR FLUCTUATIONS UNDER LEVODOPA IN FINLAND

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OBJECTIVE: Assess the cost-utility of rasagiline, entacapone and standard care (levodopa) in Parkinson's disease (PD) patients with motor fluctuations in Finland. **METHODS:** A 2-year probabilistic Markov model with 3 health states: ≤25% off-time/day', '>25% off-time/day' and 'dead' was used. Model inputs included transition probabilities from randomised clinical trials, utilities from a preference measurement study and costs and resources from a Finnish cost-of-illness study. Effectiveness measures were Quality Adjusted Life Years (QALYs) and number of months spent with ≤25% off-time/day. The primary analysis was performed from the societal perspective. Extensive sensitivity and subgroup analyses on severe patients were performed. A parity price was assumed for rasagiline and entacapone based on WHO-DDD. **RESULTS:** Over 2 years, rasagiline appeared to show both greater effectiveness and cost reductions compared with standard care (0.38 additional QALYs, over 55% additional time spent with ≤25% off-time/day and €900 savings (95% CI: [–€3400; €1090]) per treated patient. Rasagiline and entacapone yielded similar effectiveness and costs. A trend in favour of rasagiline was observed in the severe patient subgroup (approximately €660 total cost savings/patient). Sensitivity analyses confirmed robustness of the results vs. standard care. Results vs. entacapone were sensitive to changes in transition probabilities and drug prices. **CONCLUSION:** This economic model supports the use of rasagiline as a cost-effective treatment compared with levodopa alone and combined with entacapone in PD patients with motor fluctuations in Finland. Further improvements of the model should be applied to different settings to confirm these results.

PNL18

COST-EFFECTIVENESS OF CONTINUOUS DUODENAL DELIVERY OF LEVODOPA (DUODOPA®) IN PATIENTS WITH SEVERE PARKINSON'S DISEASE

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OBJECTIVE: To explore costs and health benefits of replacing conventional oral therapy with intraduodenal infusion of carbidopa/levodopa (Duodopa®) for severe Parkinson's disease (PD). **METHODS:** In the DIREQT trial 24 patients aged 50–79 years with Hoehn & Yahr stage 2.5–4.0 (at best) were randomised to receive either three weeks of conventional oral therapy followed by three weeks of Duodopa, or vice versa. Later, patients could choose to switch permanently to Duodopa. Health Related Quality of Life (HRQOL) was recorded with the 15D instrument at entry into the trial, during the trial, and then at 8 follow-ups during the subsequent 6 months. Use of health care was registered before, during and after the trial. Two-year costs and health consequences of Duodopa and conventional therapy were estimated in a decision analytic model. Costs were based on market prices and customary charges in Sweden. **RESULTS:** The mean quality-of-life scores were 0.77 for Duodopa and 0.72 for conventional therapy with considerable variation in scores for individual patients over time. The expected two year cost was $93,600 for Duodopa and $28,700 for conventional oral therapy. The expected number of Quality

Adjusted Life Years (QALYs) was 1.48 and 1.42 respectively, or $1.02 mill. per additional QALY (all values discounted at 3%). This amount would be $199,000 if patients used apomorphine as conventional therapy, $124.00 if EQ-5D were used to measure HRQOL, $99,000 if indirect costs were included. If Duodopa improves disease severity by one H&Y stage, the therapy will be cost-saving. **CONCLUSIONS:** The cost-effectiveness of Duodopa depends in particular on the cost of alternative therapies (i.e. apomorphine and oral drugs) and the extent to which Duodopa postpones PD progression. Also, the method for capturing quality-of-life has a considerable impact on the cost-effectiveness ratio. The study indicates that variability in utility scores may be much greater than previously anticipated.

PNL19

META-ANALYSIS OF CASE SERIES TO PROVIDE INPUTS FOR A DISCRETE EVENT SIMULATION OF DEEP BRAIN STIMULATION FOR THE TREATMENT OF PARKINSON'S DISEASE

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OBJECTIVE: To estimate for use in economic modeling, the time-dependent effects of deep brain stimulation (DBS) in patients with Parkinson's Disease (PD) using meta-analysis of case series. **METHODS:** A discrete event simulation of the course of advanced PD was created. It requires time-dependent functions of the effects of DBS. To obtain these, we searched the PUBMED, OVID and the Science Citation Index databases between 1980 and 2004 for papers reporting longitudinal experience with DBS. Data were extracted by three expert reviewers. The effect of DBS was measured at various time-points relative to baseline, while on and off medication. Time-dependent growth curves were developed by fitting the estimates as functions of time under fixed and random-effects models. **RESULTS:** Comparisons to baseline in the 85 studies retained showed that while off medication, activating the stimulator improved ADL rapidly (by 50.0% at 3 months) but then improvement declined slowly following a quadratic polynomial. The effect was much weaker and decline linearly while on medication but levodopa dose declined steadily, from a reduction of 590.52 (439.9–741.2) mg at 3 months to 633.8 (497.4–770.2) mg after 1 year. Motor skills improved by 47.2% and then more slowly following a fractional polynomial curve. **CONCLUSION:** These growth curves will be used to estimate the course of individual patients in simulation providing much more accurate reflection of the actual effects than traditional point estimates or transition probabilities. Given that studies can be either too small or too limited in scope to provide sound estimates of the effect of treatment, the results of meta-analytic curve fitting can be used as precise inputs to build an economic model.

PNL20

DISEASE SEVERITY AND HEALTH CARE COSTS OF RELAPSING-REMITTING MULTIPLE SCLEROSIS IN PORTUGAL

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OBJECTIVES: To measure the average health care cost per patient with relapsing remitting multiple sclerosis (RRMS) by level of severity in Portugal. Additionally, and in contrast to previous studies, the health care cost of a relapse by severity level is also calculated. **METHODS:** The study adopts the perspective of the National Health Service (NHS) and carries out a cost of treatment analysis. Information on treatment profiles and resource use was gathered through a modified Delphi Panel involving eight specialist physicians from different hospitals throughout the country. Each completed a questionnaire based on four clinical cases representing categories of the Expanded Disability Severity Scale (EDSS). Information was collected on the use of inpatient care, pharmaceuticals, ambulatory visits, and various other resources. These were valued using national information on unit costs from a variety of sources. **RESULTS:** Total health care costs per patient, in 2003, were estimated to range from €11,515 (EDSS ≤ 3) to €22,876 (EDSS ≥ 6.5). At each level of severity the cost of treatment rises with the most significant increase occurring between EDSS ≤ 3 and 3.5 ≤ EDSS ≥ 4.5. The highest expenditures are associated with the use of interferons (between 44% and 82% of the total costs). When patients have a relapse, health care costs vary between €3412 (EDSS ≤ 3) and €6718 (EDSS ≥ 6.5). At intermediate EDSS levels the costs of a relapse are €4422 for 3.5 ≤ EDSS ≥ 4.5 and €6495 for 5 ≤ EDSS ≥ 6. The most significant cost component for relapses is that related to inpatient stays. **CONCLUSIONS:** Though the number of persons with MS in Portugal is small (estimates suggest around 5000 patients), the costs to the health system are very large. Therapeutic strategies that reduce the impact of the disease (e.g. relapse avoidance) can bring about significant cost-savings. The results may be used as input to cost-effectiveness analyses and more widely in health care planning and policy.

PNL21

THE COST OF MULTIPLE SCLEROSIS (MS) IN EUROPE

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OBJECTIVES: During the last decade, the introduction of new disease-modifying drugs (DMDs) for MS gave rise to a number of studies on the economic burden of the disease and the cost-effectiveness of different treatment options. Since these surveys were conducted before DMDs were established as part of standard treatment regimens, there is a need for up-to-date cost-of-illness studies that can be used for the economic evaluation of new treatments. Therefore, European Health Economics has conducted a European-wide, cross-sectional bottom-up survey on the costs of MS, involving at least nine countries. **METHODS:** The study used a standardised mailed questionnaire providing data on demographics, direct medical and non-medical costs, informal care needs, productivity losses, relapses, utility and fatigue. **RESULTS:** The results were analysed by country, both for the whole sample and by level of disease severity measured with the Expanded Disability Status Scale (EDSS). Patients were recruited by MS clinics and MS societies, and the response rate ranged between 35% and 72%. Overall, the study includes over 10,000 patients. The samples per country are thus sufficiently large to analyse the change in costs and utility for all levels of disease severity. For example, in Sweden, the total annual cost per MS patient was estimated at €53,580, with costs increasing sevenfold for patients with severe disease compared to patients with no or very mild disability, from €16,338 to €116,502. DMDs were used by 43% of patients and accounted for 11% of total costs. In addition, analysis of variations across countries illustrates the impact of different health care and economic systems on patient management, total costs and distribution of resources. For example, services represented 29% of total costs in Sweden, due to a unique extensive home service available to severe patients. **CONCLUSIONS:** This alternative to institutionalisation reduces nursing home costs and informal care needs.